

WHAT IS CLAIMED IS:

1. A method of determining when to initiate a channel access comprising:  
initiating a channel access if at least one of the following has occurred:  
    a timer associated with a transmit queue has expired; and  
    a count associated with a transmit queue has exceeded a threshold.
2. The method of claim 1 wherein the threshold may be set for each queue.
3. The method of claim 1 wherein the threshold may be set for a plurality of queues.
4. The method of claim 1 and further comprising:  
detecting a first packet stored into an empty queue; and  
starting a timer associated with the queue.
5. The method of claim 1 and further comprising:  
storing at least one packet in a queue; and  
maintaining a count of the amount of data in the queue.

6. A method of selecting a transmit queue from a group of eligible transmit queues for transmission:

determining if any of the eligible queues have a timer expired;

selecting one of the queues having an expired timer if there is an eligible queue having an expired timer;

otherwise, determining if any of the eligible queues have a count that exceeds a threshold; and

selecting one of the queues having a count that exceeds the threshold if there is an eligible queue having a count that exceeds the threshold.

7. A method of claim 6 and further comprising:

otherwise, selecting a non-empty queue.

8. The method of claim 6 and further comprising:

detecting a first packet stored in a queue; and

starting a timer associated with the queue.

9. The method of claim 6 and further comprising:

storing at least one packet in a queue; and

maintaining a count of the amount of data in the queue.

10. The method of claim 9 wherein the count represents an amount of at least one of packets and bytes.

11. The method of claim 6 wherein the selecting one of the queues having a count comprises selecting one of the queues having a greatest count.

12. The method of claim 6 wherein the selecting one of the queues having an expired timer comprises selecting the eligible queue having a timer that expired the longest ago.

13. The method of claim 6 wherein the selecting one of the queues having an expired timer comprises selecting the eligible queue having an expired timer that has the oldest data in the queue.

14. The method of claim 6 wherein the selecting one of the queues having an expired timer comprises selecting the eligible queue having at least one of:

an expired timer that has the oldest data in the queue;  
having a timer that expired the longest ago; and  
a combination of an expired timer that has the oldest data in the queue and that expired the longest ago.

15. The method of claim 6 wherein a queue may be eligible based on comparing the queue and status of the queue to channel access rules.

16. The method of claim 15 wherein queue eligibility is defined based on queues assigned to packets of a specified priority.

17. A method comprising:  
determining when to initiate a channel access comprising:  
initiating a channel access if at least one of the following has occurred:  
a timer associated with a transmit queue has expired; and  
a count associated with a transmit queue has exceeded a threshold; and  
selecting a transmit queue from a group of eligible transmit queues for transmission.

18. The method of 17 wherein the selecting a transmit queue from a group determining if any of the eligible queues have a timer expired;  
selecting one of the queues having an expired timer if there is an eligible queue having an expired timer;  
otherwise, determining if any of the eligible queues have a count that exceeds a threshold; and  
selecting one of the queues having a count that exceeds the threshold if there is an eligible queue having a count that exceeds the threshold.

19. A method of selecting a transmit queue for transmission, comprising:

determining if any of the queues are eligible based on channel access rules;

if there are eligible queues, then determining if any of the eligible queues have a timer expired;

selecting one of the queues having an expired timer if there is an eligible queue having an expired timer;

otherwise, determining if any of the eligible queues have a count that exceeds a threshold; and

selecting one of the queues having a count that exceeds the threshold if there is an eligible queue having a count that exceeds the threshold.

20. An apparatus comprising:

a transceiver;

at least one transmit queue, each queue including a count indicating an amount of data in the queue, and a threshold;

a timer associated with each of said transmit queue; and

wherein the apparatus is adapted to initiate a channel access if the timer of one of the queues has expired or the count of one of the queues exceeds the threshold.

21. An apparatus comprising:

- a transceiver;
- a plurality of transmit queues, each queue including a count indicating an amount of data in the queue, and a threshold;
- a timer associated with each of said transmit queue; and

wherein the apparatus is adapted to select one of the at least one of the transmit queues having an expired timer if a queue has an expired timer, and otherwise, to select one of the at least one of the transmit queues having a count that exceeds the threshold if one of the queues has a count that exceeds the threshold.